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BREEDING AND WINTERING AREAS
OF MALLARDS HARVESTED
IN VARIOUS STATES AND PROVINCES

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by

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ABSTRACT

Band recoveries from mallards banded in breeding and wintering areas, weighted to reflect the population sizes they represent, were used to estimate the relative contribution of various breeding and wintering areas to the harvest in each State and Province. Sources of population data in addition to conventional waterfowl breeding population surveys were utilized resulting in larger continent-wide population estimates than those previously published. The estimates of the relative importance of various breeding and wintering areas to the kill in each State and Province are presented in a series of tables. Patterns among States in the similarity or the dissimilarity in the source of harvest are mentioned.

INTRODUCTION

In establishing waterfowl hunting regulations in the United States, an attempt is made each year to adjust the level of harvest to the waterfowl population levels. The harvest of waterfowl occurs largely during migration and frequently is a considerable distance from either breeding or wintering areas. Thus, the breeding and wintering areas of the harvested waterfowl are not readily apparent. Also, it is desirable to know the extent to which waterfowl breeding or wintering in specific areas contribute to the harvest in different States or Provinces. In order to judge the appropriateness of regulations and to better understand the harvest characteristics of birds breeding and wintering in various areas, it is important to have estimates of the relative contribution to the harvest in various States and Provinces of populations associated with various production and wintering areas. This paper presents recent information on this subject for the mallard (Anas platyrhynchos) based on banding accomplished during 1966, 1967, and 1968.

A comprehensive analysis of many aspects of the mallard banding and population data, including the subject of this paper, is now in preparation at the Migratory Bird Populations Station. This more complete analysis will include data for additional years and will be based on more biologically logical areas of reference than the "States and Provinces" used in this study. Because of the timely nature of information about the breeding and wintering ground source of the mallard harvest, this preliminary report has been completed to make current information accessible.

DATA USED AND PROCEDURES

Banding data used in this study relate only to normal wild mallards banded during a pre-hunting-season period of July 1-September 30 and a winter period of January 1-February 29. The recoveries included were limited to those reported as shot or found dead during the first hunting season after banding. Birds found dead during the hunting season were assumed to have been shot and, therefore, provided additional information on the derivation of the kill. A total of 8,078 recoveries was available to determine the breeding area derivation of the immature mallard kill; 4,392 recoveries related to adult mallards banded in breeding areas. A total of 7,354 recoveries related to postseason bandings of mallards in wintering areas. At the time these data were extracted from the files, a small percentage of the recovery records may have been missing. It is not believed this seriously biased the results. The number of recoveries occurring in each harvest area and their State or Province of banding is shown in appendix tables A1, A2 and A3.

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To obtain reliable estimates of the wintering and breeding area origin of the kill in a harvest area, certain conditions must be met. All breeding and wintering areas from which birds make a significant contribution to the harvest in a State or Province must be represented by banded birds. Also, population data must be available to serve as a basis for weighting the banding data. Population data would not be required if the same fraction of the population were banded in each breeding and wintering area. This is not the case, however, as shown clearly in table 1. This table summarizes winter population data for 1966 through 1968, based primarily on the winter inventory sponsored in January by the Bureau of Sport Fisheries and Wildlife. Wintering population totals shown for the New England States were those reported in the Annual Christmas Count of the National Audubon Society. These counts were used because they are more accurate than those of the winter inventory in this area. For example, the Audubon Christmas counts averaged 8,877 mallards in Connecticut, while the winter inventory yielded an average of only 700. In New England, mallards apparently are not found in typical waterfowl habitat and are missed by the winter inventory. The total number of mallards banded during the winter period in each area is also shown in table 1. The average wintering population was divided by the number of birds banded to determine the average winter population per banded bird. This value was used in weighting the recovery data. It is significant that most areas had sizeable samples of banded birds. The most important gap in the winter banding program was in Louisiana where 263 banded birds yielding only 15 first-season recoveries, represented an average mallard wintering population of over 1/2 million. Several States having relatively small wintering populations completely lacked banding data; this probably affected estimates only in these areas and usually to a minor degree. Generally speaking, all major segments of the continental mallard population in January of 1966, 1967, and 1968 were well represented by banded birds.

The results of the summer and preseason banding program used to indicate the breeding area derivation of the kill are shown in table 2 for immature mallards and in table 3 for adult mallards. These tables also present estimates of the size of the breeding population associated with each area and the population per bird banded (weighting factor).

The population data used in weighting summer and preseason banding data were obtained in a variety of ways. The basis of the estimate for each area is identified in tables 2 and 3. The results of the annual aerial survey of the breeding population in May, adjusted to account for birds present that are not recorded from the air based on air versus ground count comparisons, provided estimates for most of the major areas. This information was supplemented by several other sources. The Bureau's Division of Wildlife Refuges in cooperation with State biologists and Regional Office personnel developed population

estimates as part of the Refuge Division's Flyway Habitat Management Unit Project. These estimates which related to 1965 were used for seven areas. These included the relatively important States of Washington, Oregon, and Idaho. The estimate for British Columbia was developed by John Chattin, following essentially the same approach used in the adjacent States. The Bureau-sponsored "Breeding Bird Survey" (Robbins and Van Velzen, 1969) conducted in June for all species of birds provided information on mallard summer populations in a number of areas.

An index for the mallard breeding population was obtained from the breeding bird survey by multiplying the average number of mallards recorded per route in each State by the number of square miles in the State. If a single route was responsible for a large portion of the mallards recorded in an entire State, the route was omitted. In New York, for example, the mallard count made on the "Jones Beach Route" on Long Island was omitted since it represented more than half the birds recorded in the State. In nine States indexes for the mallard breeding population were obtained both by conventional waterfowl population surveys and by the breeding bird survey. Thus, it was possible to determine a ratio between population values derived from the two methods. In all instances, population indexes obtained in the conventional way were smaller than the index calculated from the breeding bird survey, and the ratios ranged from .30 for Montana to .81 for Wyoming. In most areas the ratios were reasonably close to an average of .63 mallards. Thus, the indexes of the mallard population based on the breeding bird survey were multiplied by .63 for 17 States (mostly having small populations) to obtain population figures comparable to the others listed in the table.

The total average breeding population, resulting from the sum of the various estimates used in this study, is about 1.2 million higher than that resulting from previously published summaries of breeding population surveys (Geis, Martinson, and Anderson, 1969). Population estimates used in the current study recognized a larger population in such areas as Wisconsin, eastern United States and eastern Canada than earlier estimates. Evidence to suggest that earlier estimates were somewhat low has been presented in another paper (Geis, 1970). The additional population values developed in this study to represent these "fringe areas" are believed to be minimal in most cases because of the conservative assumptions made in their development.

The number of immatures in each breeding area was estimated by assuming an average of one immature per adult in the fall flight in all areas. This was based on observed production ratios which averaged 1:1 from 1966 through 1968 for the continent-wide mallard population.

The relative size of the contribution of each preseason and winter banding area to the retrieved kill in a harvest area was estimated by multiplying the number of adult and/or immature recoveries from each banding area that occurred in a harvest area by the respective adult and/or immature weighting factor for that banding area. This was done for each banding area contributing to the kill in a harvest area and these products were then added together to obtain a weighted total recovery figure. The total recovery figures provide an index of the size of the harvest in the area. The percentage of the total kill in a harvest area coming from each banding area was computed by dividing the weighted recovery total from each banding area by the weighted recovery total from all banding areas that contributed band recoveries in the harvest area.

Because the sample sizes of recoveries of preseason bandings were small when distributed by banding area and harvest area, the weighted recoveries for adults and immatures from each banding area were combined, and the combined weighted recoveries in the area were used to estimate the relative importance of various breeding areas. The weighted recoveries of winter banding reflect only the distribution of adults, since the birds are adults during the first hunting season after banding.

The accuracy of these estimates can be examined by comparing them, area by area, with estimates calculated from the mail questionnaire and wing collection surveys conducted in Canada and the United States during the same years (table 4). When estimates based on recoveries from winter banding are compared with the kill of adult mallards based on mail surveys, there is a remarkable agreement, especially at the flyway level. There are some differences, however, which deserve comment. The comparatively larger kills in Washington, Arkansas and Louisiana calculated from weighted band recoveries suggest that too much weight was given to the bands recovered in the three States. Since most of the harvest of adults in Washington, Louisiana, and Arkansas (89, 68, and 66 percent, respectively) were related to populations wintering within each of those States (as is true for most States with significant wintering populations), it follows that the population value used for weighting winter bandings in each of the three States was probably relatively high. Conversely, the comparatively low kill estimates based on weighted recoveries in Texas, Utah, and Colorado and in the Atlantic Flyway suggest that population estimates relating to these wintering areas were relatively low. A discrepancy, present also in Pennsylvania, also may be due to a lack of winter banding in that State.

Weighted recovery totals by flyways, States, and Provinces from preseason banding also showed a good agreement with the distribution of kill as measured by mail surveys. A possible exception was the indication of a slightly larger kill in the Central Flyway, based on weighted recoveries, than was to be expected based on mail surveys.

As mentioned earlier, however, the assumption was made when developing weighting factors for preseason banding that production rates were the same in each breeding area. Drought conditions in prairie Canada and adjacent States in 1968 probably depressed production in an area that supplied many ducks to the Central Flyway more than in breeding areas that supplied other flyways. It is possible, therefore, that the weighting factor used for the Central Flyway was larger than it should have been, which resulted in an exaggerated estimate of comparative kill.

Although the distribution of weighted recoveries from preseason and postseason banding did not agree perfectly with the distribution of harvest as measured by the kill surveys, the agreement was sufficiently good to conclude that weighted recoveries provide a reasonable basis for judging the relative importance of both breeding and wintering areas in supplying birds to the mallard harvest in various States and Provinces.

RESULTS

Wintering Areas Associated with the Mallard Kill in Various Harvest Areas

The relative importance of various wintering areas to the mallard harvest in States and Provinces is shown in table 5. The kill in British Columbia was related almost entirely to wintering areas in the northern portion of the Pacific Flyway, principally Washington. Harvest in the three prairie provinces was associated with wintering populations in all four flyways in the United States. However, the relative importance of the flyways differed markedly between provinces. For example, the importance of Pacific Flyway wintering populations decreased from west to east with 53 percent of the adult kill in Alberta, being related to the Pacific Flyway, 4.2 percent in Saskatchewan, and only 0.5 percent in Manitoba. In contrast, wintering areas in the Mississippi Flyway were progressively more important from west to east, providing 15.3, 63.7, and 81.9 percent of the kill in Alberta, Saskatchewan, and Manitoba, respectively. Although wintering populations in the Atlantic Flyway were not of great importance to any of the prairie provinces, their contribution also increased markedly from west to east ranging from only 0.2 percent of the kill in Alberta to 1.2 percent in Manitoba. Birds killed in Ontario wintered in areas in both the Mississippi and Atlantic Flyways. Within the Mississippi Flyway, wintering areas associated with Ontario kill were located farther east than the areas related to the harvest in Manitoba and Saskatchewan. Wintering populations in Ohio and Tennessee were the most important in this respect. Over 30 percent of the birds killed in Ontario wintered in areas in the Atlantic Flyway, with those in South Carolina being the most important.

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The adult mallard harvest in Quebec was from populations that wintered in the Atlantic Flyway, with a small contribution coming from the eastern part of the Mississippi Flyway (Ohio).

Almost all adult mallards killed in the Pacific Flyway wintered within the flyway. In those States having large wintering populations, most of the kill was related to birds wintering within the State. For example, more than 80 percent of the kill in Washington, Idaho, and California were birds that wintered in the State. In other Pacific Flyway States the kill consisted of birds wintering either in the State or in adjacent States. Arizona was the only exception, but there were no bandings to represent the wintering population in Arizona.

It was not possible to examine the data separately for the parts of States originally in the Central Flyway that had been moved into the Pacific Flyway. Therefore, in Montana, Wyoming, Colorado, and New Mexico the derivation of the kill is shown for the entire State.

The adult mallard harvest in the western tier of Central Flyway States (Montana, Wyoming, Colorado, and New Mexico) was associated most strongly with wintering populations within each State, and the strength of the association increased from north to south (50, 56, 71, and 84 percent, respectively).

The Central Flyway States lying east of the western tier of States all have a common characteristic in that a significant proportion of their adult kill was associated with wintering populations in the Mississippi Flyway. Most of the adult mallards killed in the Dakotas, which have small wintering populations, were from populations wintering in the Mississippi Flyway wintering populations (73 and 50 percent in North and South Dakota, respectively). The most important wintering location in the Mississippi Flyway associated with the adult harvest in North and South Dakota was Arkansas (28 percent in both States). The adult kill in Nebraska, Kansas, Oklahoma, and Texas depended most heavily on wintering populations within the State, although from 18 to 35 percent of the harvest was related to Mississippi Flyway wintering areas.

Within the Mississippi Flyway those States having significant wintering populations derived the largest portion of their adult kill from populations wintering within the State. Except for Michigan and Ohio 87 percent or more of the adult harvest was associated with populations wintering within the Mississippi Flyway. Although the kill in Michigan and Ohio was largely related to wintering populations in the Mississippi Flyway (86 and 80 percent, respectively) there was a significant contribution from wintering populations in the southern half of the Atlantic Flyway. South Carolina was the most important Atlantic Flyway wintering area related to the harvest in both Michigan and Ohio. The apparent substantial relationship of wintering

populations in Texas to the kill in Alabama, is due to one recovery occurring in Alabama where there were relatively few recoveries of winter banded birds. It seems likely that the wintering area relationship to the kill in Alabama should be similar to that in other southern Mississippi Flyway States.

In most Atlantic Flyway States, the relative importance of various wintering areas associated with the adult mallard kill were probably not measured with very high precision because relatively few winter banded mallards were shot. The adult kill in Pennsylvania and New York, the two most important mallard harvest areas in the Flyway, was related to a variety of Atlantic Flyway wintering areas, and 31 and 21 percent, respectively, of the harvest was associated with wintering areas in the Mississippi Flyway. The kill in South Carolina, the third most important harvest area in the flyway, was composed mostly of mallards wintering in South Carolina (88 percent).

Breeding Area Derivation of the Kill

Estimates of the proportion of the total mallard kill in each State and Province derived from each State and Province in the breeding range are shown in table 6. Those Canadian Provinces in which significant numbers of mallards were harvested derived most of their kill from breeding areas within the Province. This was true even for the relatively large mallard kill that occurred in Ontario (93 percent of the kill was of mallards breeding in Ontario according to the banded samples). It is worthy of note, however, that fairly significant breeding populations of mallards in northern Manitoba were not represented by banded samples. In view of the generally southeastward orientation of migration from this general area, Ontario may derive more mallards from other Canadian breeding areas than is suggested by these data.

In the Pacific Flyway, locally produced mallards provide the bulk of the harvest in California, Utah, and Nevada. Although locally produced mallards contributed substantially to the kill in Washington and Oregon, breeding areas in Canada, principally Alberta, were a major source of the harvest. Arizona, Idaho, and Utah were the only States that did not obtain one-third or more of their kill from breeding populations within the State. The estimate for Arizona is imprecise, however, because no birds were banded there preseason.

In the Central Flyway, the portions of Montana, Wyoming, Colorado, and New Mexico that are assigned to the Pacific Flyway could not be identified in the tabulations available for this study. Therefore, the derivation of the kill in these States could not be related to the Pacific and Central Flyway portions. Generally speaking, the mallard harvest in the Central Flyway depended heavily on Canadian breeding areas, principally in Alberta and Saskatchewan. The degree

of dependence increased from north to south reaching from 84 to 89 percent in Texas, Oklahoma, Kansas, and New Mexico. The importance of local production was comparatively high in Montana, North Dakota and South Dakota (43, 32, and 20 percent, respectively). The data suggest that 41 percent of the harvest in Colorado was contributed from local populations. There is reason to believe, however, that the October experimental hunting seasons in the San Luis Valley of Colorado may have biased the data from Colorado due to an intensive banding and data collecting program there before migrants arrive.

Within the Mississippi Flyway, eight States (Iowa, Illinois, Indiana, Missouri, Kentucky, Arkansas, Louisiana, and Mississippi) derived the majority of their kill (generally over 70 percent) from Saskatchewan and Alberta in western Canada and relatively little from any other single location. These eight Mississippi Flyway States derived their kill from essentially the same breeding area that furnished the harvest in Nebraska, Kansas, Oklahoma, and Texas in the Central Flyway. Wisconsin, Michigan, Minnesota, and Ohio were the only Mississippi Flyway States where local production contributed significantly to harvest within the States (72, 40, 31, and 27 percent, respectively). The importance of locally produced birds in Ohio may be somewhat exaggerated if the breeding population estimate of 32,000 used for weighting purposes was too high. Ontario contributed significantly to the harvest in Ohio and Michigan while Manitoba and Saskatchewan contributed a considerable number of birds to the harvest in Minnesota. Ohio and Michigan are more similar to Atlantic Flyway States in the breeding ground derivation of the mallard harvest than they are to the other Mississippi Flyway States due to a lesser importance of western Canada birds and a substantial contribution from Ontario. Although Tennessee derived about one-half its kill from western Canada, an additional 25 percent was derived from Ontario. Weighted recoveries from Alabama suggested that North Dakota was the most important breeding area supplying the kill to Alabama followed by Ontario. It is possible that there may be a considerable sampling error associated with the relatively few recoveries occurring in Alabama.

Within the Atlantic Flyway, Ontario was consistently the major contributor to the harvest in States having a relatively large kill. In New York and Pennsylvania, breeding populations occurring within the State were quite significant. Pennsylvania was the only State in which locally produced birds provided a larger part of the kill than birds from other States or Provinces. Beginning in Maryland and continuing south in the flyway through Georgia, western Canada made a contribution to the kill. In the Atlantic Flyway south of Virginia, the northern Mississippi Flyway States also made a significant contribution to the harvest.

This report uses band recoveries, weighted to reflect the population they represent to estimate the relative importance of various production and wintering areas in providing the mallard harvest in each State and Province. The population values used for weighting were obtained from a variety of sources. This resulted in a total population higher than those previously presented due largely to a recognition of more mallards in eastern Canada and States not normally considered in the conventional breeding population survey. This study revealed some general patterns of similarity and dissimilarity among States concerning the source of their harvest. Sometimes these patterns did not conform to existing flyway boundaries used in establishing hunting regulations. For example, the breeding ground source of the harvest in the eastern tier of Central Flyway States resembled that of most of the Mississippi Flyway States more than the source of the harvest in other States in the Central Flyway. Also, Michigan and Ohio in the Mississippi Flyway were far more similar to Atlantic Flyway States in breeding ground source of harvest than they were to the other Mississippi Flyway States. Logical areas of reference for establishing regulations, however, must consider many factors in addition to the breeding area source of the mallard kill. A wide variety of specific information having management implications is suggested by the tables, which in this report present estimates of the breeding and wintering area source of the kill in each State and Province.

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Table 1.--Summary of winter inventory counts[1]/ and winter bandings of mallards in the United States, 1966-1968.

	Winter inventory			Average 1966-68	Total number banded	Average population per bird banded
	1966	1967	1968			
Pacific Flyway						
Washington	652,167	727,294	870,326	749,929	7,067	106
Oregon	211,992	103,253	111,112	142,119	4,598	31
Idaho	356,541	534,840	477,200	456,194	6,150	74
California	281,189	304,725	267,764	284,559	2,527	113
Nevada	24,240	23,932	11,718	19,963	1,008	20
Utah	35,410	6,642	7,303	16,452	2,925	6
Arizona	5,028	5,438	5,200	5,222	0	--
Central Flyway						
Montana	176,701	152,245	115,775	148,240	11,415	13
North Dakota	26,355	3,225	2,250	10,610	1,289	8
South Dakota	253,164	365,615	218,375	279,051	6,288	44
Wyoming	113,236	36,680	29,176	59,697	2,279	26
Nebraska	230,135	240,865	350,492	273,831	12,822	21
Colorado	234,517	298,394	346,748	293,220	19,047	15
Kansas	477,501	660,980	704,864	614,448	14,581	42
New Mexico	29,119	56,874	52,551	46,181	6,654	7
Oklahoma	52,696	218,472	331,264	200,810	5,034	40
Texas	234,501	145,692	399,661	259,951	898	289
Mississippi Flyway						
Minnesota	12,605	14,334	7,600	11,513	0	--
Wisconsin	12,999	5,315	5,700	8,005	0	--
Michigan	9,139	7,223	7,100	7,821	2,819	3
Iowa	286,372	123,091	107,400	172,288	2,417	71
Illinois	478,134	439,283	145,600	354,339	13,165	27
Indiana	55,185	64,726	12,200	44,037	3,007	15
Ohio	38,826	54,223	12,200	35,083	1,871	19
Missouri	528,273	483,125	168,900	393,433	3,138	125

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Table 1. Summary of winter inventory counts[1]/ and winter bandings of mallards
in the United States, 1966-1968--continued

	Winter inventory			Average 1966-68	Total number banded	Average population per bird banded
	1966	1967	1968			
Mississippi Flyway						
Kentucky	31,300	4,700	25,600	20,533	2,815	7
Arkansas	1,406,700	1,440,900	843,300	1,230,300	10,264	120
Tennessee	369,800	457,100	239,300	355,400	16,311	22
Louisiana	685,800	445,100	381,000	503,967	263	1,916
Mississippi	150,900	141,600	208,900	167,133	5,078	33
Alabama	39,400	48,200	35,700	41,100	1,625	25
Atlantic Flyway						
Maine	.14	10	42	22	30	1
Vermont	18	248	41	102	0)	16
New Hampshire	531	302	550	461	35)	
Massachusetts	2,305	2,464	2,464	2,411	270	9
Connecticut	8,594	7,516	10,520	8,877	0	--
Rhode Island	508	445	700	551	27	20
New York	12,400	6,400	7,600	8,800	1,387	6
Pennsylvania	9,300	5,800	4,400	6,500	2	3,250
West Virginia	600	1,600	600	933	165	6
New Jersey	6,000	5,400	4,400	5,267	530	10
Delaware	15,100	17,800	900	11,267	496	23
Maryland	54,800	23,500	30,100	36,133	2,362	15
Virginia	8,200	11,000	7,600	8,933	2,928	3
North Carolina	9,100	8,900	14,700	10,900	1,718	6
South Carolina	86,300	83,300	73,400	81,000	9,286	9
Georgia	1,700	1,100	1,900	1,567	419	4
Florida	2,600	3,000	200	1,933	142	14

1/ As summarized in unpublished reports by each of the Flyway Representatives. Counts for New
England states obtained from Annual Christmas bird counts sponsored by National Audubon
Society.

Table 2.--Number of immature mallards banded during the 1966-68 preseason banding periods and weighting factors used in the analysis of recoveries the first hunting season after banding.

	Year of banding			Total 1966-68	Population estimate in thousands	Source of estimate	Average population per bird banded
	1966	1967	1968				
Canada							
NWT	238	238	132	608	770	A	1266
British Columbia	0	29	80	109	200	F	1835
Alberta	1428	1468	536	3432	2150	A	626
Saskatchewan	2452	2069	573	5094	2508	A	492
Manitoba	426	1324	834	2584	625	A	242
Ontario	2861	3035	3140	9036	710	C	79
Quebec	17	127	702	846	40	C	72
Nova Scotia	8	1	9	18	--	-	--
P.E.I.	0	3	2	5	--	-	--
New Brunswick	6	16	9	31	--	-	--
Pacific Flyway							
Washington	913	524	501	1938	130	H	67
Oregon	828	595	536	1959	87	H	44
Idaho	405	236	366	1007	53	H	53
California	508	606	590	1704	150	A	88
Nevada	248	327	152	727	27	G	37
Utah	385	256	70	711	46	G	65

Table 2.--Number of immature mallards banded during the 1966-68 preseason banding periods and weighting factors used in the analysis of recoveries the first hunting season after banding.--continued

	Year of banding			Total 1966-68	Population estimate in thousands	Source of estimate	Average population per bird banded
	1966	1967	1968				
Central Flyway							
Montana	1040	286	497	1823	249	A&B	137
North Dakota	524	102	339	965	428	A	444
South Dakota	794	765	413	1972	292	A	148
Wyoming	66	57	0	123	136	A	1106
Nebraska	23	150	132	305	57	A	187
Colorado	2410	2057	2167	6634	69	A	10
Kansas	45	21	0	66	12	G	182
New Mexico	14	1	0	15	--	-	--
Mississippi Flyway							
Minnesota	3317	2092	1932	7341	120	B&E	16
Wisconsin	2532	1948	2333	6813	150	B&D	22
Michigan	1417	2833	2362	6612	75	E	11
Iowa	320	195	5	520	8	H	15
Illinois	15	76	10	101	16	G	158
Indiana	60	187	155	402	6.8	G	17
Ohio	1480	706	1593	3779	32	G	8
Missouri	17	0	6	23	0	G	--
Tennessee	30	0	0	30	--	-	--
Mississippi	0	3	0	3	--	-	--

Table 2.--Number of immature mallards banded during the 1966-68 preseason banding periods and weighting factors used in the analysis of recoveries the first hunting season after banding.--continued

	Year of banding			Total 1966-68	Population estimate in thousands	Source of estimate	Average population per bird banded
	1966	1967	1968				
Atlantic Flyway							
Maine	83	36	30	149	2.0	G	13
Vermont	307	13	323	643	0.4	G	1
New Hampshire	0	0	7	7	3.4	G	486
Massachusetts	93	164	163	420	4.0	H	10
Connecticut	41	0	1	42	2.0	H	48
Rhode Island	61	1	1	63	0.2	G	3
New York	3769	3577	1392	8738	23.4	G	3
Pennsylvania	14	303	152	469	36.8	G	78
West Virginia	4	3	13	20	1.5	G	75
New Jersey	11	31	56	98	3.2	G	33
Delaware	6	38	11	55	3.0	H	55
Maryland	40	0	35	75	4.4	G	59
Virginia	10	13	3	26	4.3	G	165
North Carolina	6	0	1	7	--	-	--
South Carolina	2	0	0	2	--	-	--

A-Average of 1966, 1967 and 1968 breeding population survey results adjusted for visibility.
B-Special State survey results.
C-Letter of September 18, 1969, to Arthur S. Hawkins (Mississippi Flyway Representative, Bureau of Sport Fisheries & Wildlife) from Dr. Graham Cooch (Staff Specialist, Migratory Bird Populations, Canadian Wildlife Service), and survey data - personal communication to Aelred D. Geis (Migratory Bird Specialist, Migratory Bird Populations Station).
D-Letter of December 17, 1969, to Aelred D. Geis from James March (Biologist, Wisconsin Department of Natural Resources).
E-Arthur S. Hawkins' memorandum to Director, BSFW, September 30, 1969.
F-Memorandum of January 19, 1970, to Aelred D. Geis from John Chattin (Pacific Flyway Representative, BSFW).
G-Based on Breeding Bird Survey, BSFW, Migratory Bird Populations Station.
H-Flyway Habitat Management Unit Project Report No. 7, Division of Wildlife Refuges, BSFW

Table 3.--Number of adult mallards banded during the 1966-68 preseason banding periods and weighting factors used in the analysis of recoveries the first hunting season after banding.

	Year of banding			Total 1966-68	Population estimate in thousands	Source of estimate	Average population per bird banded
	1966	1967	1968				
Canada							
NWT	417	128	299	844	770	A	912
British Columbia	0	61	164	225	200	F	889
Alberta	1379	3367	1887	6633	2150	A	324
Saskatchewan	3235	3099	3144	9478	2508	A	265
Manitoba	136	1723	1535	3394	625	A	184
Ontario	852	1416	1088	3356	710	C	212
Quebec	0	73	310	383	40	C	104
Nova Scotia	0	1	1	2	--	--	--
New Brunswick	0	4	2	6	--	--	--
Pacific Flyway							
Washington	774	217	336	1327	130	A	98
Oregon	1004	489	473	1966	87	H	44
Idaho	1413	628	565	2606	53	H	20
California	761	1101	1062	2924	150	A	51
Nevada	325	96	138	559	27	G	48
Utah	361	81	90	532	46	G	86
Central Flyway							
Montana	2287	1395	1474	5156	249	A&B	48
North Dakota	2634	913	530	4077	428	A	105
South Dakota	1718	1625	1807	5150	292	A	57
Wyoming	2441	53	0	2494	136	A	55
Nebraska	74	164	342	580	57	A	98
Colorado	1899	2319	2785	7003	69	A	10
Kansas	36	68	0	104	12	G	115
New Mexico	13	0	0	13	--	-	--

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Table 3.--Number of adult mallards banded during the 1966-68 preseason banding periods and weighting factors used in the analysis of recoveries the first hunting season after banding.--continued

| | Year of banding | | | Total | Population estimate in thousands | Source of estimate | Average population per bird banded |
	1966	1967	1968	1966-68			
Mississippi Flyway							
Minnesota	2144	2004	1522	5670	120	B&E	21
Wisconsin	1328	1472	1797	4597	150	B&D	33
Michigan	447	1005	938	2390	75	E	31
Iowa	69	61	17	147	8	H	54
Illinois	17	29	0	46	16	G	348
Indiana	13	96	40	149	6.8	G	46
Ohio	213	158	834	1205	32	G	27
Missouri	14	26	3	43	0	G	0
Kentucky	0	1	0	1	--	-	--
Arkansas	1	0	0	1	--	-	--
Louisiana	3	0	0	3	--	-	--
Mississippi	0	1	0	1	--	-	--
Atlantic Flyway							
Maine	5	15	4	24	2.0	G	83
Vermont	53	1	116	170	0.4	G	2
New Hampshire	0	0	1	1	3.4	G	3400
Massachusetts	8	46	53	107	4.0	H	37
Connecticut	2	7	0	9	2.0	H	222
Rhode Island	7	8	0	15	0.2	G	13
New York	916	858	345	2119	23.4	G	11
Pennsylvania	278	401	281	960	36.8	G	38
West Virginia	0	0	0	0	1.5	G	--
New Jersey	60	55	34	149	3.2	G	21
Delaware	64	71	9	144	3.0	H	21
Maryland	30	0	10	40	4.4	G	110
Virginia	2	0	15	17	4.3	G	253

For footnote see Table 2.

Table 4.--Comparison of the distribution of the mallard kill
throughout North America (excluding Alaska), during the
1966-68 hunting seasons based on weighted band recoveries
and mail questionnaire and wing collection surveys.

	Adult kill based on:		Total kill based on:	
	Winter banding	Mail surveys	Preseason banding	Mail surveys
Canada				
NWT	0.1	--	--	--
British Columbia	6.5	12.9	7.5	14.6
Alberta	31.5	28.5	24.8	28.3
Saskatchewan	39.6	31.2	26.1	22.0
Manitoba	14.9	16.2	11.7	12.4
Ontario	7.2	10.2	28.1	20.0
Quebec	0.3	0.9	1.7	2.6
TOTAL (Canada)	100.1	99.9	99.9	100.0
Pacific Flyway				
Washington	12.0	7.9	7.5	7.8
Oregon	3.6	3.5	4.8	4.0
Idaho	5.1	6.4	4.8	5.7
California	6.0	7.1	5.4	9.2
Nevada	0.6	0.9	0.9	1.0
Utah	0.7	2.2	1.9	2.3
Arizona	0.1	0.2	0.1	0.2
	28.2	28.2	25.4	30.2
Central Flyway				
Montana	2.9	3.3	4.0	3.2
North Dakota	4.9	3.9	5.6	3.9
South Dakota	4.4	3.7	4.1	3.2
Wyoming	0.6	0.6	0.8	0.6
Nebraska	4.8	4.6	3.9	3.2
Colorado	2.2	3.1	2.8	2.3
Kansas	3.7	3.1	3.0	2.2
New Mexico	0.2	0.3	0.5	0.2
Oklahoma	1.6	2.0	1.2	1.4
Texas	2.6	3.3	2.9	2.5
	27.9	27.9	28.8	22.7

Table 4.--Comparison of the distribution of the mallard kill
throughout North America (excluding Alaska), during the
1966-68 hunting seasons based on weighted band recoveries
and mail questionnaire and wing collection surveys.--
continued.

	Adult kill based on:		Total kill based on:	
	Winter banding	Mail surveys	Preseason banding	Mail surveys
Mississippi Flyway				
Minnesota	6.0	5.0	3.7	7.5
Wisconsin	2.6	2.9	3.6	4.2
Michigan	0.7	1.2	1.6	2.1
Iowa	2.0	2.8	2.2	3.0
Illinois	4.5	5.1	4.2	4.7
Indiana	0.6	0.5	0.8	0.5
Ohio	0.4	0.7	0.8	0.9
Missouri	3.7	2.8	4.5	2.5
Kentucky	0.6	0.5	0.7	0.4
Arkansas	9.6	7.6	8.3	5.7
Tennessee	1.8	1.9	1.5	1.7
Louisiana	7.3	5.6	5.7	5.5
Mississippi	1.4	1.4	1.5	1.2
Alabama	0.5	0.6	0.4	0.4
	41.7	38.6	39.5	40.3
Atlantic Flyway				
New England	0.1	0.7	0.3	0.7
New York	0.3	0.8	1.3	1.5
Pennsylvania	0.2	0.9	1.1	1.3
West Virginia	T	T	0.1	T
New Jersey	0.1	0.4	0.5	0.5
Delaware	0.1	0.3	0.1	0.3
Maryland	0.2	0.5	0.6	0.6
Virginia	0.1	0.6	0.7	0.6
North Carolina	0.2	0.4	0.4	0.3
South Carolina	0.6	0.8	0.9	0.7
Georgia	0.1	0.2	0.3	0.2
Florida	T	T	0.1	0.1
	2.0	5.6	6.3	6.8
TOTAL (U. S.)	99.8	100.3	100.0	100.0

Table 5.--Wintering area derivation (in percent) of the adult mallard
kill in various harvest areas during the 1966-68 hunting
seasons based on weighted first hunting season recoveries
from post season banding in winter areas.

Banding area	Harvest area					
	B.C.	Alta.	Sask.	Man.	Ont.	Que.
Pacific Flyway						
Washington	71.0	28.3	1.9	--	--	--
Oregon	16.2	2.8	0.4	0.5	--	--
Idaho	2.8	19.2	1.8	--	--	--
California	4.2	2.6	--	--	--	--
Nevada	--	--	0.1	--	--	--
Utah	--	0.1	0.0	--	--	--
Total	94.2	53.0	4.2	0.5	--	--
Central Flyway						
Montana	1.0	3.8	0.8	--	--	--
North Dakota	--	0.1	0.2	--	--	--
South Dakota	--	3.7	2.7	5.0	--	--
Wyoming	--	1.6	0.5	--	--	--
Nebraska	--	3.9	3.4	3.5	--	--
Colorado	0.6	6.6	2.9	0.5	--	--
Kansas	--	7.4	9.8	3.4	--	--
New Mexico	--	0.8	0.3	0.1	--	--
Oklahoma	1.5	1.2	3.9	3.9	--	--
Texas	--	2.2	7.0	--	--	--
Total	3.1	31.3	31.5	16.4	--	--
Mississippi Flyway						
Michigan	--	--	0.1	0.2	2.7	--
Iowa	--	1.1	4.7	4.6	--	--
Illinois	2.0	1.0	5.3	11.8	9.1	--
Indiana	--	--	0.4	1.7	3.0	--
Ohio	--	--	--	1.2	15.7	13.6
Missouri	--	3.8	8.4	8.1	--	--
Kentucky	--	0.0	0.4	0.8	--	--
Arkansas	--	7.3	25.5	40.8	8.0	--
Tennessee	0.8	1.3	4.2	9.1	26.2	--
Louisiana	--	--	11.6	--	--	--
Mississippi	--	0.8	2.6	1.1	1.9	--
Alabama	--	--	0.5	2.5	0.8	--
Total	2.8	15.3	63.7	81.9	67.4	13.6
Atlantic Flyway						
Massachusetts	--	--	--	--	0.3	--
New York	--	--	--	--	1.3	23.1
West Virginia	--	--	--	--	0.8	--
New Jersey	--	--	--	--	0.9	--
Delaware	--	--	--	--	2.2	16.3
Maryland	--	--	--	0.2	3.2	22.3
Virginia	--	--	0.1	0.2	2.2	--
North Carolina	--	--	--	--	1.7	18.4
South Carolina	--	0.2	0.5	0.8	18.3	6.3
Florida	--	--	--	--	0.5	--
Total	--	0.2	0.6	1.2	31.4	86.4
TOTAL	100.1	99.8	100.0	100.0	98.8	100.0

Table 5.--Wintering area derivation (in percent) of the adult mallard
kill in various harvest areas during the 1966-68 hunting
seasons based on weighted first hunting season recoveries
from banding post season in winter areas.--continued

Banding area	Harvest area					
	Wash.	Ore.	Idaho	Calif.	Nev.	Utah
Pacific Flyway						
Washington	88.7	28.5	9.3	2.6	--	--
Oregon	7.5	45.6	1.4	1.2	--	1.7
Idaho	1.6	7.7	84.0	0.5	13.4	24.2
California	1.1	14.0	--	95.0	40.8	6.1
Nevada	--	0.2	0.3	--	45.1	18.2
Utah	0.0	0.1	0.6	0.1	0.6	37.2
Total	98.9	96.1	95.6	99.4	99.9	87.4
Central Flyway						
Montana	0.5	0.9	1.8	0.2	--	0.7
North Dakota	0.0	--	--	--	--	--
Wyoming	--	--	0.4	--	--	2.9
Nebraska	0.1	0.4	--	0.1	--	1.2
Colorado	0.4	0.6	1.0	0.4	--	2.5
Kansas	--	0.4	0.6	--	--	--
New Mexico	--	0.1	0.4	--	--	3.1
Oklahoma	--	--	--	--	--	2.2
Total	1.0	2.4	4.2	0.7	--	12.6
Mississippi Flyway						
Iowa	--	1.5	--	--	--	--
Illinois	0.1	--	0.2	--	--	--
Total	0.1	1.5	0.2	--	--	--
TOTAL	100.1	100.0	100.0	100.1	99.9	100.0

Table 5.--Wintering area derivation (in percent) of the adult mallard
kill in various harvest areas during the 1966-68 hunting
seasons based on weighted first hunting season recoveries
from banding post season in winter areas.--continued

Banding area	Harvest area					
	Ariz.	Mont.	N.Dak.	S.Dak.	Wyo.	Nebr.
Pacific Flyway						
Washington	--	12.2	--	--	6.5	1.7
Idaho	44.1	15.2	0.6	--	--	0.6
California	--	1.4	0.9	--	--	--
Nevada	35.2	--	--	--	1.2	--
Utah	3.2	0.3	--	--	--	--
Total	82.5	29.1	1.5	--	7.7	2.3
Central Flyway						
Montana	--	49.6	0.4	0.6	1.6	0.7
North Dakota	--	--	0.8	0.2	--	--
South Dakota	--	0.6	4.7	21.4	2.7	4.2
Wyoming	--	1.7	--	0.4	56.3	--
Nebraska	--	1.9	3.2	4.0	3.9	29.1
Colorado	9.1	3.1	1.6	2.0	14.0	6.1
Kansas	--	2.7	11.3	10.8	5.2	17.8
New Mexico	8.3	0.6	0.4	0.2	1.3	0.2
Oklahoma	--	2.1	2.7	7.5	--	4.7
Texas	--	7.5	--	2.5	--	--
Total	17.4	69.7	25.1	49.6	85.0	62.8
Mississippi Flyway						
Michigan	--	--	0.2	0.1	--	--
Iowa	--	--	3.2	3.0	--	1.7
Illinois	--	0.3	7.0	3.4	--	1.3
Indiana	--	--	1.2	0.1	--	--
Ohio	--	--	0.3	--	--	--
Missouri	--	--	7.6	10.6	--	3.9
Kentucky	--	--	0.3	0.2	--	0.1
Arkansas	--	--	28.3	27.5	7.3	12.2
Tennessee	--	0.6	6.3	3.5	--	--
Louisiana	--	--	14.5	--	--	14.9
Mississippi	--	--	3.3	1.7	--	1.0
Alabama	--	--	0.6	--	--	--
Total	--	0.9	72.8	50.1	7.3	35.1
Atlantic Flyway						
Maryland	--	--	0.1	--	--	--
Virginia	--	--	0.0	0.0	--	--
North Carolina	--	--	--	0.1	--	--
South Carolina	--	0.1	0.6	0.4	--	--
Total	--	0.1	0.7	0.5	--	--
TOTAL	99.9	99.8	100.1	100.2	100.0	100.2

Table 5.--Wintering area derivation (in percent) of the adult mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from banding post season in winter areas.--continued

Banding area	Harvest area					
	Colo.	Kans.	N.Mex.	Okla.	Tex.	Minn.
Pacific Flyway						
Idaho	2.5	1.5	--	1.8	--	--
Utah	0.1	--	--	--	--	--
Total	2.6	1.5	--	1.8	--	--
Central Flyway						
Montana	1.1	0.1	3.0	--	0.2	--
South Dakota	1.5	3.1	--	1.1	0.6	0.3
Wyoming	1.8	--	--	--	--	--
Nebraska	2.2	3.0	5.0	3.1	2.1	0.7
Colorado	70.7	1.9	7.1	1.5	1.1	0.1
Kansas	3.6	55.3	--	29.3	18.0	2.1
New Mexico	4.6	0.2	84.8	--	0.7	--
Oklahoma	--	13.4	--	41.0	6.2	0.2
Texas	9.8	2.9	--	--	45.2	3.6
Total	95.3	79.9	99.9	76.0	74.1	7.0
Mississippi Flyway						
Michigan	--	0.0	--	--	--	0.2
Iowa	--	2.2	--	6.8	3.0	--
Illinois	--	0.8	--	--	1.1	9.5
Indiana	--	--	--	--	0.2	1.2
Ohio	--	--	--	--	--	0.9
Missouri	--	1.3	--	--	5.3	15.5
Kentucky	--	0.1	--	--	--	0.6
Arkansas	2.0	12.2	--	14.3	15.3	26.0
Tennessee	--	0.9	--	0.5	0.3	9.1
Louisiana	--	--	--	--	--	23.6
Mississippi	--	1.0	--	0.8	0.5	3.9
Alabama	--	--	--	--	--	0.5
Total	2.0	18.5	--	22.4	25.7	91.0
Atlantic Flyway						
New York	--	--	--	--	--	T
Maryland	--	--	--	--	--	0.1
Virginia	--	--	--	--	--	0.1
South Carolina	--	--	--	--	--	1.7
Total	--	--	--	--	--	1.9
TOTAL	99.9	99.9	99.9	100.2	99.8	99.9

Table 5.--Wintering area derivation (in percent) of the adult mallard
kill in various harvest areas during the 1966-68 hunting
seasons based on weighted first hunting season recoveries
from banding post season in winter areas.--continued

Banding area	Harvest area					
	Wis.	Mich.	Iowa	Ill.	Ind.	Ohio
Pacific Flyway						
Oregon	--	--	--	0.3	--	--
Idaho	--	--	1.4	--	--	--
Total	--	--	1.4	0.3	--	--
Central Flyway						
Montana	0.2	--	--	0.1	--	--
South Dakota	1.9	--	0.8	1.1	--	--
Nebraska	0.3	--	2.4	0.7	1.3	--
Colorado	--	--	0.6	0.1	--	--
Kansas	0.6	--	3.9	1.8	--	--
Oklahoma	--	2.0	2.2	0.7	--	3.9
Total	3.0	2.0	9.9	4.5	1.3	3.9
Mississippi Flyway						
Michigan	0.9	9.7	0.3	0.3	1.5	2.7
Iowa	--	--	7.9	--	--	--
Illinois	13.8	1.4	12.5	24.1	11.9	2.7
Indiana	6.0	5.9	0.8	1.5	37.9	1.4
Ohio	2.2	4.7	--	0.8	1.2	33.0
Missouri	11.0	--	11.6	7.3	--	--
Kentucky	0.6	1.1	0.7	1.5	--	--
Arkansas	21.0	12.1	37.9	22.9	15.1	11.8
Tennessee	25.3	37.1	11.3	13.3	21.9	23.4
Louisiana	--	--	--	15.8	--	--
Mississippi	8.2	--	3.7	5.7	6.2	--
Alabama	1.8	3.8	0.9	0.6	--	5.0
Total	90.8	75.8	87.6	93.8	95.7	80.0
Atlantic Flyway						
Massachusetts	0.1	--	0.2	--	--	--
New York	0.2	0.6	--	--	--	--
West Virginia	0.1	--	--	--	--	--
Delaware	0.3	1.1	--	--	--	--
Maryland	0.4	1.5	0.3	--	--	1.5
Virginia	0.6	1.5	0.1	0.1	0.2	0.9
North Carolina	0.3	1.0	--	0.1	--	1.9
South Carolina	3.7	16.2	0.5	1.4	2.7	11.9
Georgia	0.1	0.2	0.1	0.0	--	--
Florida	0.4	--	--	--	--	--
Total	6.2	22.1	1.2	1.6	2.9	16.2
TOTAL	100.0	99.9	100.1	100.2	99.9	100.1

Table 5.--Wintering area derivation (in percent) of the adult mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from banding post season in winter areas.--continued

Banding area	Harvest area					
	Mo.	Ky.	Ark.	Tenn.	La.	Miss.
Pacific Flyway						
Washington	--	--	0.8	--	--	--
Oregon	--	--	0.1	--	--	--
Total	--	--	0.9	--	--	--
Central Flyway						
Montana	0.3	--	0.1	0.3	0.2	--
South Dakota	1.8	--	0.7	--	0.2	1.2
Nebraska	0.9	--	0.9	0.4	1.0	1.1
Colorado	0.2	--	0.1	--	0.2	--
Kansas	6.9	--	3.0	--	1.7	--
Oklahoma	2.0	--	0.2	--	0.8	2.1
Texas	--	--	--	5.9	1.5	--
Total	12.1	--	5.0	6.6	5.6	4.4
Mississippi Flyway						
Michigan	--	0.6	--	0.4	--	--
Iowa	6.5	--	1.4	1.4	0.7	3.7
Illinois	6.9	13.3	5.3	13.2	3.0	6.4
Indiana	0.3	0.9	0.2	1.2	0.1	0.8
Ohio	0.2	2.3	0.1	2.3	0.3	--
Missouri	19.2	23.1	7.3	5.1	3.2	--
Kentucky	0.2	3.6	0.4	0.9	0.1	0.2
Arkansas	26.9	29.5	65.5	24.4	14.1	28.2
Tennessee	3.5	17.3	3.5	39.1	0.9	6.2
Louisiana	19.5	--	7.4	--	68.3	--
Mississippi	4.0	6.1	2.6	2.0	3.2	47.5
Alabama	0.3	--	0.2	2.6	0.3	0.7
Total	80.6	96.7	93.9	92.6	94.2	93.7
Atlantic Flyway						
Maryland	--	--	--	--	--	0.4
Virginia	--	0.2	--	0.1	--	0.1
North Carolina	--	--	--	--	--	0.2
South Carolina	0.4	3.2	0.2	0.7	0.1	1.4
Georgia	--	--	T	0.1	--	--
Total	0.4	3.4	0.2	0.9	0.1	2.1
TOTAL	100.0	100.1	100.0	100.1	99.9	100.2

Table 5.--Wintering area derivation (in percent) of the adult mallard
kill in various harvest areas during the 1966-68 hunting
seasons based on weighted first hunting season recoveries
from banding post season in winter areas.--continued.

Banding area	Harvest area					
	Ala.	Maine	Vt.	N.H.	Mass.	Conn.
Central Flyway						
South Dakota	3.3	--	--	--	--	--
Texas	21.9	--	--	--	--	--
Total	25.2	--	--	--	--	--
Mississippi Flyway						
Michigan	0.2	--	--	--	--	--
Illinois	8.1	--	--	--	--	--
Ohio	4.2	--	--	--	--	--
Kentucky	1.1	--	--	--	--	--
Arkansas	18.1	--	--	--	--	--
Tennessee	22.9	--	--	--	--	--
Mississippi	9.9	--	--	--	--	--
Alabama	9.5	--	--	--	--	--
Total	74.0	--	--	--	--	--
Atlantic Flyway						
New Hampshire	--	53.3	--	100.0	--	--
Massachusetts	--	15.0	--	--	52.8	--
New York	--	21.1	--	--	10.6	45.2
New Jersey	--	--	--	--	7.8	--
Maryland	--	--	--	--	12.8	54.8
Virginia	--	--	100.0	--	--	--
North Carolina	--	10.5	--	--	15.9	--
South Carolina	0.7	--	--	--	--	--
Total	0.7	99.9	100.0	100.0	99.9	100.0
TOTAL	99.9	99.9	100.0	100.0	99.9	100.0

Table 5.--Wintering area derivation (in percent) of the adult mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from banding post season in winter areas.--continued

Banding area	Harvest area					
	R.I.	N.Y.	Pa.	W.Va.	N.J.	Del.
Mississippi Flyway						
Michigan	--	--	0.7	--	--	--
Iowa	--	9.6	--	--	--	--
Illinois	--	--	11.9	--	--	--
Ohio	--	--	4.1	--	--	--
Tennessee	--	11.7	14.3	--	--	7.2
Total	--	21.3	31.0	--	--	7.2
Atlantic Flyway						
Massachusetts	100.0	--	--	--	3.6	--
Connecticut	--	--	--	100.0	--	--
New York	--	36.8	2.8	--	12.8	2.1
New Jersey	--	3.8	6.2	--	45.3	--
Delaware	--	3.0	9.9	--	--	37.1
Maryland	--	16.6	23.7	--	24.8	40.7
Virginia	--	6.1	4.0	--	4.8	3.0
North Carolina	--	4.3	1.4	--	5.1	4.2
South Carolina	--	8.2	21.0	--	3.5	5.8
Total	100.0	78.8	69.0	100.0	99.9	92.9
TOTAL	100.0	100.1	100.0	100.0	99.9	100.1

Table 5.--Wintering area derivation (in percent) of the adult mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from banding post season in winter areas.--continued

Banding area	Harvest area					
	Md.	Va.	N.C.	S.C.	Ga.	Fla.
Mississippi Flyway						
Michigan	0.5	1.5	0.6	--	--	--
Illinois	4.7	--	10.8	1.7	--	--
Indiana	--	--	--	3.7	--	--
Ohio	3.2	9.3	3.7	--	8.3	--
Kentucky	--	1.8	--	0.5	3.2	--
Tennessee	--	10.8	13.0	4.1	27.9	60.2
Mississippi	--	--	19.7	--	--	--
Alabama	--	--	--	--	11.2	--
Total	8.4	23.4	47.8	10.0	70.6	60.2
Atlantic Flyway						
New York	--	1.6	--	--	--	--
West Virginia	1.0	--	--	--	--	--
New Jersey	1.6	--	1.9	0.6	--	--
Delaware	7.7	5.6	--	--	9.9	--
Maryland	63.6	19.2	3.1	1.0	--	--
Virginia	3.1	40.5	4.8	0.2	--	--
North Carolina	3.3	3.2	16.4	--	--	--
South Carolina	10.5	6.5	24.2	88.1	15.3	--
Georgia	0.8	--	1.9	0.3	4.1	--
Florida	--	--	--	--	--	39.8
Total	91.6	76.6	52.3	90.2	29.3	39.8
TOTAL	100.0	100.0	100.1	100.2	99.9	100.0

Table 6.--Breeding area derivation (in percent) of the mallard kill
in various harvest areas during the 1966-68 hunting seasons
based on weighted first hunting season recoveries from
summer and pre-hunting-season bandings of adult and immature
mallards.

Banding area	Harvest area					
	B.C.	Alta.	Sask.	Man.	Ont.	Que.
Canada						
NWT	8.1	4.9	8.8	--	--	--
British Columbia	64.6	--	--	--	--	--
Alberta	11.7	91.0	9.6	5.3	--	--
Saskatchewan	--	4.0	80.2	4.8	1.0	--
Manitoba	--	--	0.9	84.2	0.2	--
Ontario	--	--	--	--	92.9	13.4
Quebec	--	--	--	--	2.4	76.0
Total	84.4	99.9	99.5	94.3	96.5	89.4
Pacific Flyway						
Washington	15.4	--	--	--	--	--
Idaho	0.1	T	--	--	--	--
Total	15.5	T	--	--	--	--
Central Flyway						
Montana	--	0.1	0.4	0.3	--	--
North Dakota	--	--	0.1	1.3	0.1	--
South Dakota	--	--	--	1.1	0.1	--
Total	--	0.1	0.5	2.7	0.2	--
Mississippi Flyway						
Minnesota	--	--	--	2.8	0.3	--
Wisconsin	--	--	--	0.1	0.4	--
Michigan	--	--	--	--	1.4	0.2
Iowa	--	--	--	--	T	--
Indiana	--	--	--	--	T	--
Ohio	--	--	--	--	0.3	--
Total	--	--	--	2.9	2.4	0.2
Atlantic Flyway						
Vermont	--	--	--	--	--	0.1
New Hampshire	--	--	--	--	--	8.0
Massachusetts	--	--	--	--	T	0.2
New York	--	--	--	-.-	0.6	2.1
Pennsylvania	--	--	--	--	0.2	--
Total	--	-.-	--	--	0.8	10.4
TOTAL	99.9	100.0	100.0	99.9	99.9	100.0

T (trace) = less than 0.1

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Table 6.--Breeding area derivation (in percent) of the mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from summer and pre-hunting season bandings of adult and immature mallards.--continued

Banding area	Harvest area						
	Wash.	Ore.	Idaho	Calif.	Nev.	Utah	Ariz.
Canada							
NWT	7.5	3.1	10.0	2.0	--	13.4	--
British Columbia	15.8	15.9	16.0	4.0	--	--	--
Alberta	38.0	22.9	49.4	8.3	17.2	17.7	40.8
Saskatchewan	2.1	0.7	3.7	2.2	--	1.6	--
Manitoba	--	--	0.6	0.4	--	--	--
Total	63.4	42.6	79.7	16.9	17.2	32.7	40.8
Pacific Flyway							
Washington	33.8	8.6	0.8	0.4	--	--	--
Oregon	1.5	40.5	1.2	9.3	2.4	--	--
Idaho	0.4	0.4	11.3	0.2	0.7	1.1	--
California	--	5.2	--	70.5	1.2	--	--
Nevada	--	0.1	0.3	1.5	71.0	1.3	27.4
Utah	--	--	1.6	0.6	3.2	12.8	10.8
Total	35.7	54.8	15.2	82.5	78.5	65.2	38.2
Central Flyway							
Montana	0.9	2.3	5.1	0.4	4.3	2.0	17.2
South Dakota	--	0.4	--	0.1	--	--	--
Colorado	--	--	T	--	--	--	3.8
Total	0.9	2.7	5.1	0.5	4.3	2.0	21.0
TOTAL	100.0	100.1	100.0	99.9	100.0	99.9	100.0

Table 6.--Breeding area derivation (in percent) of the mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from summer and pre-hunting-season bandings of adult and immature mallards.--continued

Banding area	Harvest area						
	Mont.	N.Dak.	S.Dak.	Wyo.	Nebr.	Colo.	Kans.
Canada							
NWT	5.4	10.0	12.5	18.3	5.6	9.4	22.6
Alberta	45.3	19.4	16.4	32.1	20.7	16.6	15.6
Saskatchewan	4.6	10.7	31.3	17.7	42.0	13.2	46.3
Manitoba	--	8.8	7.5	--	2.6	3.9	1.5
Ontario	--	0.2	0.2	--	--	--	0.8
Total	55.3	49.1	67.9	68.1	70.9	43.1	86.8
Pacific Flyway							
Oregon	--	--	--	0.6	--	--	--
Idaho	0.4	--	--	0.3	--	0.2	--
Nevada	--	--	--	--	--	0.1	--
Utah	0.2	--	--	--	--	0.4	--
Total	0.6	--	--	0.9	--	0.7	--
Central Flyway							
Montana	42.7	1.0	2.4	6.8	4.6	2.9	2.4
North Dakota	1.3	31.5	7.5	6.4	6.0	0.4	3.0
South Dakota	--	16.7	20.5	--	4.5	0.2	1.9
Wyoming	--	--	--	17.6	3.4	10.0	--
Nebraska	--	0.2	0.8	--	9.9	2.1	2.3
Colorado	T	T	--	0.1	0.1	40.6	--
Kansas	--	--	--	--	--	--	3.1
Total	44.0	49.4	31.1	30.9	28.5	56.2	12.7
Mississippi Flyway							
Minnesota	T	1.5	0.9	--	0.6	--	0.5
Wisconsin	--	T	--	--	--	--	--
Michigan	--	--	--	--	T	--	--
Iowa	--	T	--	--	--	--	--
Ohio	--	T	T	--	--	--	--
Total	T	1.5	0.9	--	0.6	--	0.5
TOTAL	99.9	100.0	99.9	99.9	100.0	100.0	100.0

Table 6.--Breeding area derivation (in percent) of the mallard kill
in various harvest areas during the 1966-68 hunting seasons
based on weighted first hunting season recoveries from
summer and pre-hunting-season bandings of adult and immature
mallards.--continued

Banding area	Harvest area					
	N.Mex.	Okla.	Texas	Minn.	Wisc.	Mich.
Canada						
NWT	--	9.4	12.6	4.1	--	--
Alberta	88.6	22.9	16.9	5.2	1.1	4.7
Saskatchewan	--	49.6	50.3	11.0	1.7	11.1
Manitoba	--	1.9	4.0	20.1	4.2	3.1
Ontario	--	--	0.3	6.3	6.3	24.8
Quebec	--	--	--	--	--	0.5
Total	88.6	83.8	84.1	46.7	13.3	44.2
Pacific Flyway						
Utah	1.7	--	--	--	--	--
Central Flyway						
Montana	1.2	4.4	2.6	0.9	--	--
North Dakota	--	3.2	6.6	4.8	1.7	--
South Dakota	--	6.6	3.6	8.2	2.8	1.1
Nebraska	--	--	2.0	--	--	--
Colorado	8.5	--	0.3	--	--	--
Kansas	--	1.2	--	--	--	--
Total	9.7	15.4	15.1	13.9	4.5	1.1
Mississippi Flyway						
Minnesota	--	0.8	0.6	31.3	4.3	2.4
Wisconsin	--	--	0.2	4.8	72.1	6.6
Michigan	--	--	--	0.7	2.3	39.7
Iowa	--	--	--	1.3	1.8	0.1
Illinois	--	--	--	1.1	1.1	1.2
Indiana	--	--	--	0.1	0.3	0.2
Ohio	--	--	--	T	0.2	4.3
Total	--	0.8	0.8	39.3	82.1	54.5
Atlantic Flyway						
New York	--	--	--	T	--	0.1
TOTAL	100.0	100.0	100.0	99.9	99.9	99.9

Table 6.--Breeding area derivation (in percent) of the mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from summer and pre-hunting-season bandings of adult and immature mallards.--continued

Banding area	Harvest area						
	Iowa	Ill.	Ind.	Ohio	Mo.	Ky.	Ark.
Canada							
NWT	9.7	--	--	--	11.6	--	6.3
British Columbia	--	2.5	--	--	--	--	--
Alberta	15.3	20.0	49.1	--	22.0	16.2	13.8
Saskatchewan	34.2	31.9	8.0	--	36.9	34.3	52.6
Manitoba	19.5	12.7	2.8	8.3	11.5	10.4	6.7
Ontario	0.8	3.7	15.6	31.9	0.8	21.7	2.0
Quebec	--	--	--	--	--	--	0.1
Total	79.5	70.8	75.5	40.2	82.8	82.6	81.5
Central Flyway							
Montana	2.2	0.3	--	--	0.7	0.8	1.6
North Dakota	4.1	3.0	3.2	1.6	6.9	--	7.0
South Dakota	2.7	4.1	0.9	5.3	4.4	1.9	6.6
Nebraska	--	--	--	--	0.3	--	--
Kansas	--	--	--	--	--	--	0.2
Total	9.0	7.4	4.1	6.9	12.3	2.7	15.4
Mississippi Flyway							
Minnesota	5.9	5.7	3.1	1.4	1.2	2.0	1.5
Wisconsin	3.1	9.2	5.8	6.2	0.9	6.8	1.3
Michigan	0.7	0.7	3.2	8.0	0.1	3.1	0.1
Iowa	1.7	1.0	--	--	--	0.3	0.1
Illinois	--	4.8	--	--	2.7	--	--
Indiana	--	0.2	6.6	1.0	--	1.2	T
Ohio	0.1	0.2	1.4	27.2	--	1.1	0.1
Total	11.5	21.8	20.1	43.8	4.9	14.5	3.1
Atlantic Flyway							
New York	--	T	0.2	0.3	--	0.3	T
Pennsylvania	--	--	--	8.8	--	--	--
Total	--	T	0.2	9.1	--	0.3	T
TOTAL	100.0	100.0	99.9	100.0	100.0	100.1	100.0

Table 6.--Breeding area derivation (in percent) of the mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from summer and pre-hunting-season bandings of adult and immature mallards.--continued

Banding area	Harvest area						
	Tenn.	La.	Miss.	Ala.	Maine	Vt.	N.H.
Canada							
NWT	10.4	4.5	--	--	--	--	--
Alberta	2.6	16.5	22.1	9.6	--	--	--
Saskatchewan	26.7	50.5	35.6	7.9	--	--	--
Manitoba	10.0	8.9	15.3	10.9	--	--	--
Ontario	25.3	1.0	5.8	18.0	--	--	--
Quebec	0.6	--	--	--	--	70.4	--
Total	75.6	81.4	78.8	46.4	--	70.4	--
Pacific Flyway							
Idaho	--	0.2	--	--	--	--	--
Central Flyway							
Montana	0.4	1.7	1.1	--	--	--	--
North Dakota	5.2	8.6	4.1	32.6	--	--	--
South Dakota	6.2	5.0	9.6	3.4	--	--	--
Nebraska	--	0.2	--	--	--	--	--
Colorado	--	T	--	--	--	--	--
Kansas	--	0.2	--	--	--	--	--
Total	11.8	15.7	14.8	36.0	--	--	--
Mississippi Flyway							
Minnesota	2.5	1.4	2.5	2.2	--	--	--
Wisconsin	4.6	1.0	2.7	6.2	--	--	--
Michigan	2.9	0.1	0.8	4.4	--	--	--
Iowa	0.2	T	--	--	--	--	--
Indiana	1.1	--	0.4	--	--	--	--
Ohio	1.1	0.1	0.1	0.7	--	--	--
Total	12.4	2.6	6.5	13.5	--	--	--
Atlantic Flyway							
Maine	--	--	--	--	89.8	--	51.9
Vermont	--	--	--	--	--	24.1	--
Massachusetts	--	--	--	--	9.3	--	48.1
New York	0.2	T	T	0.6	0.9	5.5	--
Pennsylvania	--	--	--	3.4	--	--	--
Total	0.2	T	T	4.0	100.0	29.6	100.0
TOTAL	100.0	99.9	100.1	99.9	100.0	100.0	100.0

Table 6.--Breeding area derivation (in percent) of the mallard kill in various harvest areas during the 1966-68 hunting seasons based on weighted first hunting season recoveries from summer and pre-hunting-season bandings of adult and immature mallards.--continued

Banding area	Harvest area						
	Mass.	Conn.	R.I.	N.Y.	Pa.	W.Va.	N.J.
Canada							
NWT	--	--	--	--	--	--	22.6
Manitoba	--	--	--	3.9	1.9	--	4.6
Ontario	--	21.3	--	57.1	41.4	33.6	36.7
Quebec	9.9	28.1	60.8	7.2	2.6	11.4	11.5
Total	9.9	49.4	60.8	68.2	45.9	45.0	75.4
Central Flyway							
North Dakota	--	--	--	--	--	16.6	--
Mississippi Flyway							
Minnesota	--	--	--	0.4	0.7	--	0.5
Wisconsin	--	--	--	0.6	1.8	--	--
Michigan	--	--	--	1.6	3.4	11.9	2.4
Ohio	--	--	--	0.2	1.3	1.3	--
Total	--	--	--	2.8	7.2	13.2	2.9
Atlantic Flyway							
Maine	13.2	--	15.2	0.9	--	--	4.1
Vermont	--	0.1	--	0.1	T	--	0.1
New Hampshire	--	2.0	--	--	--	--	--
Massachusetts	73.8	46.4	--	0.1	--	--	0.5
Rhode Island	--	2.0	24.0	T	0.1	--	--
New York	3.0	--	--	27.0	1.9	1.4	3.8
Pennsylvania	--	--	--	0.7	44.0	--	--
West Virginia	--	--	--	--	--	23.8	--
New Jersey	--	--	--	0.2	--	--	12.1
Delaware	--	--	--	--	0.7	--	1.0
Total	90.0	50.5	39.2	29.0	46.7	25.2	21.6
TOTAL	99.9	99.9	100.0	100.0	99.8	100.0	99.9

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Table 6.--Breeding area derivation (in percent) of the mallard kill
in various harvest areas during the 1966-68 hunting seasons
based on weighted first hunting season recoveries from
summer and pre-hunting-season bandings of adult and immature
mallards.--continued

Banding area	Harvest area							
	Del.	Md.	Va.	N.C.	S.C.	Ga.	Fla.	Mex.
Canada								
Saskatchewan	--	10.8	18.4	--	17.3	11.2	--	--
Manitoba	--	--	3.3	--	--	23.3	--	--
Ontario	58.4	43.7	46.1	59.7	43.5	40.2	65.6	--
Quebec	6.1	6.5	--	2.4	1.0	--	--	--
Total	64.5	61.0	67.8	62.1	61.8	74.7	65.6	--
Pacific Flyway								
California	--	--	--	--	--	--	--	83.6
Central Flyway								
Montana	--	--	--	--	0.7	--	--	--
North Dakota	--	--	--	7.1	7.3	--	--	--
South Dakota	--	--	2.0	1.9	0.8	8.7	7.9	--
Colorado	--	--	--	--	--	--	--	16.4
Total	--	--	2.0	9.0	8.8	8.7	7.9	16.4
Mississippi Flyway								
Minnesota	1.8	--	0.6	1.3	2.7	1.6	5.1	--
Wisconsin	1.9	2.5	6.5	6.0	10.5	6.0	13.7	--
Michigan	6.2	1.7	4.0	5.7	5.3	4.5	1.5	--
Iowa	--	--	--	--	0.7	--	--	--
Indiana	--	--	--	--	--	--	2.3	--
Ohio	--	0.6	1.9	2.6	2.4	2.3	1.1	--
Total	9.9	4.8	13.0	15.6	21.6	14.4	23.7	--
Atlantic Flyway								
Maine	--	0.3	--	0.5	--	--	--	--
Vermont	0.2	0.1	0.1	0.1	·T	--	--	--
Massachusetts	--	--	--	0.3	--	--	--	--
Rhode Island	--	0.1	--	--	--	--	--	--
New York	12.1	3.6	3.8	6.5	2.3	0.6	2.8	--
Pennsylvania	--	3.1	2.7	3.9	4.8	1.6	--	--
New Jersey	--	--	0.4	--	--	--	--	--
Delaware	8.3	2.1	--	1.9	0.8	--	--	--
Maryland	5.0	24.8	1.1	--	--	--	--	--
Virginia	--	--	9.1	--	--	--	--	--
Total	25.6	34.1	17.2	13.2	7.9	2.2	2.8	--
TOTAL	100.0	99.9	100.0	99.9	100.1	100.0	100.0	100.0

Table A1.--Number of first hunting season recoveries from mallards
banded postseason (winter), 1966-68 occurring in each
State and Province of recovery.

Banding area	Recovery area							
	Alaska	NWT	B.C.	Alta.	Sask.	Man.	Ont.	Que.
Pacific Flyway								
Washington	1	-	18	35	3	-	-	.
Oregon	1	-	14	12	2	1	-	-
Idaho	-	-	1	34	4	-	-	-
California	-	-	1	3	-	-	-	-
Nevada	-	-	-	-	1	-	-	-
Utah	-	-	-	3	1	-	-	-
Central Flyway								
Montana	-	-	2	38	10	-	-	-
North Dakota	-	-	-	1	5	-	-	-
South Dakota	-	-	-	11	10	7	-	-
Wyoming	-	-	-	8	3	-	-	-
Nebraska	-	-	-	24	26	10	-	-
Colorado	-	-	1	56	31	2	-	-
Kansas	-	1	-	23	38	5	-	-
New Mexico	-	-	-	15	7	1	-	-
Oklahoma	-	-	1	4	16	6	-	-
Texas	-	-	-	1	4	-	-	-
Mississippi Flyway								
Michigan	-	-	-	1	6	4	27	-
Iowa	-	-	-	2	11	4	-	-
Illinois	-	-	2	5	32	27	10	-
Indiana	-	-	-	-	5	7	8	-
Ohio	-	-	-	-	-	4	25	1
Missouri	-	-	-	4	11	4	-	-
Kentucky	-	-	-	-	9	7	-	-
Arkansas	-	-	-	8	35	21	2	-
Tennessee	-	-	1	8	32	26	36	-
Louisiana	-	-	-	-	1	-	-	-
Mississippi	-	-	-	3	13	2	2	-
Alabama	-	-	-	-	3	6	1	-
Atlantic Flyway								
Massachusetts	-	-	-	-	-	-	1	-
New York	-	-	-	-	-	-	6	5
West Virginia	-	-	-	-	-	-	4	-
New Jersey	-	-	-	-	-	-	3	-
Delaware	-	-	-	-	-	-	3	1
Maryland	-	-	-	-	-	1	6	2
Virginia	-	-	-	-	3	5	22	-
North Carolina	-	-	-	-	-	-	8	4
South Carolina	-	-	-	3	9	6	63	1
Florida	-	-	-	-	-	-	1	-
TOTAL	2	1	41	302	331	156	228	14

Table A1.--Number of first hunting season recoveries from mallards
banded postseason (winter), 1966-68 occurring in each
State and Province of recovery.--continued

Banding area	Recovery area							
	N.B.	Wash.	Ore.	Idaho	Calif.	Nev.	Utah	Ariz.
Pacific Flyway								
Washington	--	269	26	12	4	--	--	--
Oregon	--	78	142	6	6	--	1	--
Idaho	--	7	10	155	1	3	6	1
California	--	3	12	--	136	6	1	--
Nevada	--	--	1	2	--	38	17	3
Utah	--	1	1	15	2	2	128	1
Central Flyway								
Montana	--	13	7	19	2	--	1	--
North Dakota	--	1	--	--	--	--	--	--
Wyoming	--	--	--	2	--	--	2	--
Nebraska	--	1	2	--	1	--	1	--
Colorado	--	9	4	9	4	--	3	1
Kansas	--	--	1	2	--	--	--	--
New Mexico	--	--	1	8	--	--	8	2
Oklahoma	--	--	--	--	--	--	1	--
Mississippi Flyway								
Iowa	--	--	2	--	--	--	--	--
Illinois	--	1	--	1	--	--	--	--
Atlantic Flyway								
Maine	1	--	--	--	--	--	--	--
TOTAL	1	383	209	231	156	49	169	8

Table A1.--Number of first hunting season recoveries from mallards
banded postseason (winter), 1966-68 occurring in each
State and Province of recovery.--continued

Banding area	Recovery area							
	Mont.	N.D.	S.D.	Wyo.	Nebr.	Colo.	Kans.	N.M.
Pacific Flyway								
Washington	9	--	--	1	2	--	--	--
Idaho	16	1	--	--	1	2	2	--
California	1	1	--	--	--	--	--	--
Nevada	--	--	--	1	--	--	--	--
Utah	5	--	--	--	--	1	--	--
Central Flyway								
Montana	297	4	5	2	7	5	1	1
North Dakota	--	13	3	--	--	--	--	--
South Dakota	1	14	57	1	12	2	7	--
Wyoming	5	--	2	35	--	4	--	--
Nebraska	7	20	22	3	175	6	14	1
Colorado	16	14	15	15	51	272	12	2
Kansas	5	35	30	2	54	5	129	--
New Mexico	7	7	3	3	3	39	3	52
Oklahoma	4	9	22	--	15	--	33	--
Texas	2	--	1	--	--	2	1	--
Mississippi Flyway								
Michigan	--	9	2	--	--	--	1	--
Iowa	--	6	5	--	3	--	3	--
Illinois	1	34	15	--	6	--	3	--
Indiana	--	11	1	--	--	--	--	--
Ohio	--	2	--	--	--	--	--	--
Missouri	--	8	10	--	4	--	1	--
Kentucky	--	6	3	--	1	--	2	--
Arkansas	--	31	27	1	13	1	10	--
Tennessee	2	38	19	--	--	--	4	--
Louisiana	--	1	--	--	1	--	--	--
Mississippi	--	13	6	--	4	--	3	--
Alabama	--	3	--	--	--	--	--	--
Atlantic Flyway								
Maryland	--	1	--	--	--	--	--	--
Virginia	--	2	1	--	--	--	--	--
North Carolina	--	--	1	--	--	--	--	--
South Carolina	1	9	5	--	--	--	--	--
TOTAL	379	292	255	64	352	339	229	56

Table A1.--Number of first hunting season recoveries from mallards
banded postseason (winter), 1966-68 occurring in each
State and Province of recovery.--continued

	Recovery area							
Banding area	Okla.	Texas	Minn.	Wisc.	Mich.	Iowa	Ill.	Ind.
Pacific Flyway								
Oregon	--	--	--	--	--	--	1	--
Idaho	1	--	--	--	--	1	--	--
Central Flyway								
Montana	--	1	--	1	--	7	--	--
South Dakota	1	1	1	3	--	1	3	--
Nebraska	6	7	5	1	--	6	4	1
Colorado	4	5	1	--	--	2	1	--
Kansas	29	30	8	1	--	5	5	--
New Mexico	--	7	--	--	--	--	--	--
Oklahoma	43	11	1	--	1	3	2	--
Texas	--	11	2	--	--	--	--	--
Mississippi Flyway								
Minnesota	--	--	1	--	--	--	--	--
Michigan	--	--	12	21	64	5	12	8
Iowa	4	3	--	--	--	6	--	--
Illinois	--	3	57	35	1	25	108	7
Indiana	--	1	13	28	8	3	12	41
Ohio	--	--	8	8	5	--	5	1
Missouri	--	3	20	6	--	5	7	--
Kentucky	--	--	14	6	3	5	25	--
Arkansas	5	9	35	12	2	17	23	2
Tennessee	1	1	68	80	34	28	74	16
Louisiana	--	--	2	--	--	--	1	--
Mississippi	1	1	19	17	--	6	21	3
Alabama	--	--	3	5	3	2	3	--
Atlantic Flyway								
Massachusetts	--	--	--	1	--	1	--	--
New York	--	--	1	2	2	--	--	--
New Jersey	--	--	--	1	--	--	--	--
Delaware	--	--	--	1	1	--	--	--
Maryland	--	--	1	2	2	1	--	--
Virginia	--	--	5	13	10	2	3	1
North Carolina	--	--	--	3	3	--	1	--
South Carolina	--	--	31	29	37	3	19	5
Georgia	--	--	--	1	1	1	1	--
Florida	--	--	--	2	--	--	--	--
TOTAL	95	94	308	279	177	128	332	85

Table A1.--Number of first hunting season recoveries from mallards
banded postseason (winter), 1966-68 occurring in each
State and Province of recovery.--continued

Banding area	Recovery area							
	Ohio	Mo.	Ky.	Ark.	Tenn.	La.	Miss.	Ala.
Pacific Flyway								
Washington	--	--	--	2	--	--	--	--
Oregon	--	--	--	1	--	--	--	--
Central Flyway								
Montana	--	2	--	2	1	3	--	--
South Dakota	--	4	--	4	--	1	1	1
Nebraska	--	4	--	11	1	9	2	--
Colorado	--	1	--	2	--	3	--	--
Kansas	--	16	--	18	--	8	--	--
Oklahoma	1	5	--	1	--	4	2	--
Texas	--	--	--	--	1	1	--	1
Mississippi Flyway								
Michigan	9	--	3	4	7	--	--	1
Iowa	--	9	--	5	1	2	2	--
Illinois	1	25	8	50	24	22	9	4
Indiana	1	2	1	3	4	1	2	--
Ohio	18	1	2	2	6	3	--	3
Missouri	--	15	3	15	2	5	--	--
Kentucky	--	3	8	13	6	4	1	2
Arkansas	1	22	4	140	10	23	9	2
Tennessee	11	16	13	4	89	8	11	14
Louisiana	--	1	--	1	--	7	--	--
Mississippi	--	12	3	20	3	19	55	4
Alabama	2	1	--	2	5	2	1	5
Atlantic Flyway								
Maryland	1	--	--	--	--	--	1	--
Virginia	3	--	1	1	1	--	1	--
North Carolina	3	--	--	--	--	--	1	--
South Carolina	14	4	6	6	4	2	6	1
Georgia	--	--	--	1	1	--	--	--
TOTAL	65	143	52	345	166	127	104	38

Table A1.--Number of first hunting season recoveries from mallards
banded postseason (winter), 1966-68 occurring in each
State and Province of recovery.--continued

Banding area	Recovery area							
	Me.	Vt.	N.H.	Mass.	Conn.	R.I.	N.Y.	Pa.
Mississippi Flyway								
Michigan	--	--	--	--	--	--	--	1
Iowa	--	--	--	--	--	--	1	--
Illinois	--	--	--	--	--	--	--	2
Ohio	--	--	--	--	--	--	--	1
Tennessee	--	--	--	--	--	--	4	3
Atlantic Flyway								
New Hampshire	2	--	2	--	--	--	--	--
Massachusetts	1	--	--	7	--	1	--	--
New York	2	--	--	2	2	--	43	2
New Jersey	--	--	--	1	--	--	3	3
Delaware	--	--	--	--	--	--	1	2
Maryland	--	--	--	1	1	--	8	7
Virginia	--	1	--	--	--	--	15	6
North Carolina	1	--	--	3	--	--	5	1
South Carolina	--	--	--	--	--	--	7	11
TOTAL	6	1	2	14	3	1	87	39

Table A1.--Number of first hunting season recoveries from mallards banded postseason (winter), 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area					
	W.Va.	N.J.	Del.	Md.	Va.	N.C.
Mississippi Flyway						
Michigan	--	--	--	1	2	1
Illinois	--	--	--	1	--	2
Ohio	--	--	--	1	2	1
Kentucky	--	--	--	--	1	--
Tennessee	-.-	--	1	--	2	3
Mississippi	--	--	--	--	--	3
Atlantic Flyway						
Massachusetts	--	1	--	--	--	--
New York	--	5	1	--	1	--
West Virginia	2	--	--	1	--	--
New Jersey	--	12	--	1	--	1
Delaware	--	--	5	2	1	--
Maryland	--	4	8	24	5	1
Virginia	--	4	3	6	54	8
North Carolina	--	2	2	3	2	13
South Carolina	--	1	2	7	3	14
Georgia	--	--	--	1	--	2
TOTAL	2	29	22	48	73	49

	S.C.	Ga.	Fla.
Mississippi Flyway			
Illinois	1	--	--
Indiana	4	--	--
Ohio	--	1	--
Kentucky	1	1	--
Tennessee	3	5	1
Alabama	--	1	--
Atlantic Flyway			
New Jersey	1	--	--
Delaware	--	1	--
Maryland	1	--	--
Virginia	1	--	--
South Carolina	162	4	--
Georgia	1	2	--
Florida	--	--	1
TOTAL	175	15	2

Table A2.--Number of first hunting season recoveries from immature mallards banded preseason, 1966-68 occurring in each State and Province of recovery.

Banding area	Recovery area							
	NWT	B.C.	Alta.	Sask.	Man.	Ont.	Que.	N.S.
Canada								
NWT	2	1	2	5	--	--	--	--
British Columbia	--	7	--	--	--	--	--	--
Alberta	--	5	100	10	2	--	--	--
Saskatchewan	--	--	6	106	3	2	--	--
Manitoba	--	--	--	2	109	1	--	--
Ontario	--	--	--	--	--	736	5	--
Quebec	--	--	--	--	--	28	50	--
Nova Scotia	--	--	--	--	--	--	--	2
Pacific Flyway								
Washington	--	47	--	--	--	--	--	--
Central Flyway								
Montana	--	--	--	1	1	--	--	--
North Dakota	--	--	--	--	1	--	--	--
South Dakota	--	--	--	--	2	--	--	--
Mississippi Flyway								
Minnesota	--	--	--	--	64	4	--	--
Wisconsin	--	--	--	--	--	5	--	--
Michigan	--	--	--	--	--	77	1	--
Iowa	--	--	--	--	--	1	--	--
Indiana	--	--	--	--	--	1	--	--
Ohio	--	--	--	--	--	22	--	--
Atlantic Flyway								
Vermont	--	--	--	--	--	--	4	--
New Hampshire	--	--	--	--	--	--	1	--
Massachusetts	--	--	--	--	--	1	1	--
New York	--	--	--	--	--	128	25	--
TOTAL	2	60	108	124	182	1006	87	2

Table A2.--Number of first hunting season recoveries from immature mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area							
	N.B.	Wash.	Ore.	Idaho	Calif.	Nev.	Utah	Ariz.
Canada								
NWT	--	3	1	1	--	--	1	--
British Columbia	--	2	3	3	1	--	--	--
Alberta	--	21	9	15	4	1	2	--
Saskatchewan	--	1	--	3	2	--	--	--
Manitoba	--	--	--	1	--	--	--	--
New Brunswick	5	--	--	--	--	--	--	--
Pacific Flyway								
Washington	--	193	25	2	3	--	--	--
Oregon	--	15	266	5	40	2	--	--
Idaho	--	3	2	52	1	1	2	--
California	--	--	16	--	253	1	--	--
Nevada	--	--	1	3	12	93	3	2
Utah	--	--	--	3	--	1	80	--
Central Flyway								
Montana	--	3	6	8	1	2	1	1
South Dakota	--	--	1	--	--	--	--	--
Colorado	--	--	--	--	--	--	--	2
Atlantic Flyway								
New York	1	--	--	--	--	--	--	--
TOTAL	6	241	330	96	317	101	89	5

Table A2.--Number of first hunting season recoveries from immature
mallards banded preseason, 1966-68 occurring in each State
and Province of recovery.--continued

Banding area	Recovery area							
	Mont.	N.D.	S.D.	Wyo.	Nebr.	Colo.	Kans.	N.M.
Canada								
NWT	--	3	2	1	--	1	3	--
Alberta	14	11	7	2	3	1	--	--
Saskatchewan	1	7	14	1	17	3	10	--
Manitoba	--	7	7	--	2	3	--	--
Ontario	--	1	1	--	--	--	--	--
Pacific Flyway								
Oregon	--	--	--	1	--	--	--	--
Idaho	2	--	--	--	--	--	--	--
Nevada	--	--	--	--	--	1	--	--
Utah	1	--	--	--	--	--	--	1
Central Flyway								
Montana	74	2	4	1	5	1	3	--
North Dakota	1	19	2	1	2	--	1	--
South Dakota	--	37	26	--	6	--	2	--
Wyoming	--	--	--	1	1	2	--	--
Nebraska	--	--	1	--	12	1	2	--
Colorado	--	--	--	--	1	562	--	18
Kansas	--	--	--	--	--	--	3	--
Mississippi Flyway								
Minnesota	1	29	13	--	6	--	6	--
Wisconsin	--	1	--	--	--	--	--	--
Michigan	--	--	--	--	1	--	--	--
Iowa	--	1	--	--	--	--	--	--
Ohio	--	--	1	--	--	--	--	--
Missouri	--	--	1	--	--	--	--	--
TOTAL	94	118	79	8	56	·575	30	19

Table A2.--Number of first hunting season recoveries from immature mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area							
	Okla.	Texas	Minn.	Wisc.	Mich.	Iowa	Ill.	Ind.
Canada								
NWT	--	1	1	--	--	--	--	--
Alberta	5	2	3	--	--	2	6	--
Saskatchewan	6	17	1	--	2	6	13	--
Manitoba	--	1	15	3	1	9	10	--
Ontario	--	1	14	19	24	2	11	5
Quebec	--	--	--	--	1	--	--	--
Central Flyway								
Montana	1	3	2	--	--	2	--	--
North Dakota	--	2	1	--	--	1	--	--
South Dakota	2	4	11	2	1	3	5	--
Nebraska	--	1	--	--	--	--	--	--
Colorado	--	3	--	--	--	--	--	--
Mississippi Flyway								
Minnesota	5	7	440	38	10	41	66	5
Wisconsin	--	2	51	682	11	20	62	7
Michigan	--	--	7	47	309	6	15	11
Iowa	--	--	8	29	1	18	20	--
Illinois	--	--	--	--	1	--	4	--
Indiana	--	--	1	2	2	--	1	12
Ohio	--	--	1	7	40	2	6	5
Atlantic Flyway								
New York	--	--	1	--	4	--	1	3
TOTAL	19	44	557	829	407	111	221	48

Table A2.--Number of first hunting season recoveries from immature mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area							
	Ohio	Mo.	Ky.	Ark.	Tenn.	La.	Miss.	Ala.
Canada								
NWT	--	2	--	2	1	1	--	--
Alberta	--	7	1	8	--	7	4	--
Saskatchewan	--	12	3	44	5	32	6	--
Manitoba	--	8	1	10	2	7	2	--
Ontario	16	1	8	15	15	6	4	5
Quebec	--	--	--	1	1	--	--	--
Pacific Flyway								
Idaho	--	--	--	--	--	1	--	--
Central Flyway								
Montana	--	1	--	3	--	3	--	--
North Dakota	--	3	--	5	--	6	--	2
South Dakota	2	7	--	19	4	9	6	--
Colorado	--	--	--	--	--	1	--	--
Mississippi Flyway								
Minnesota	3	19	2	36	9	33	8	2
Wisconsin	5	8	6	20	6	13	8	2
Michigan	23	2	11	6	18	3	6	5
Iowa	--	--	1	1	2	1	--	--
Illinois	--	2	--	--	--	--	--	--
Indiana	1	--	4	1	5	--	--	--
Ohio	117	--	1	1	6	5	1	3
Tennessee	--	--	--	--	1	--	--	--
Atlantic Flyway								
New York	7	--	5	1	4	1	1	3
Pennsylvania	5	--	--	--	--	--	--	--
TOTAL	179	72	43	173	79	129	46	22

Table A2.--Number of first hunting season recoveries from immature
mallards banded preseason, 1966-68 occurring in each State
and Province of recovery.--continued

Banding area	Recovery area							
	Me.	Vt.	N.H.	Mass.	Conn.	R.I.	N.Y.	Pa.
Canada								
Manitoba	--	--	--	--	--	--	1	--
Ontario	--	--	--	--	--	--	52	18
Quebec	--	3	--	1	1	--	8	2
New Brunswick	1	--	--	1	--	--	--	--
Mississippi Flyway								
Minnesota	--	--	--	--	--	--	--	3
Wisconsin	--	--	--	--	--	--	--	2
Michigan	--	--	--	--	--	--	5	10
Ohio	--	--	--	--	--	--	3	6
Atlantic Flyway								
Maine	16	--	--	1	--	2	1	--
Vermont	--	56	--	--	1	--	8	--
Massachusetts	3	--	4	24	2	--	1	--
Connecticut	--	--	--	--	5	--	--	--
Rhode Island	--	--	--	--	--	5	1	2
New York	1	2	--	--	3	--	618	21
Pennsylvania	--	--	--	--	--	--	1	35
TOTAL	21	61	4	27	12	7	699	99

Table A2.--Number of first hunting season recoveries from immature
mallards banded preseason, 1966-68 occurring in each State
and Province of recovery.--continued

Banding area	Recovery area			
	W.Va.	N.J.	Del.	Md.
Canada				
Ontario	--	8	6	11
Quebec	1	5	1	3
New Brunswick	--	1	--	--
Mississippi Flyway				
Wisconsin	--	--	1	1
Michigan	4	6	1	2
Ohio	1	--	--	--
Atlantic Flyway				
Maine	--	--	--	1
Vermont	--	4	--	3
Massachusetts	--	2	--	--
Rhode Island	--	--	--	1
New York	3	15	7	37
Pennsylvania·	--	--	--	1
West Virginia	2	--	--	--
New Jersey	--	9	--	--
Delaware	--	--	1	--
Maryland	--	--	1	15
TOTAL	11	50	18	75

Table A2.--Number of first hunting season recoveries from immature
mallards banded preseason, 1966-68 occurring in each State
and Province of recovery.--continued

Banding area	Recovery area				
	Va.	N.C.	S.C.	Ga.	Fla.
Canada					
Saskatchewan	1	--	2	--	--
Ontario	19	17	21	4	6
Quebec	--	1	1	--	--
Central Flyway					
South Dakota	--	--	--	1	--
Mississippi Flyway					
Minnesota	2	1	7	1	1
Wisconsin	3	2	9	2	3
Michigan	10	7	18	4	1
Indiana	--	--	--	--	1
Ohio	3	3	5	--	1
Atlantic Flyway					
Maine	--	1	--	--	--
Vermont	4	2	1	--	--
Massachusetts	--	1	--	--	--
New York	37	31	31	5	3
Pennsylvania	--	1	1	--	--
Delaware	--	1	1	--	--
Maryland	1	--	--	--	--
TOTAL	80	68	97	17	16

Table A3.--Number of direct recoveries from adult mallards banded preseason, 1966-68 occurring in each State and Province of recovery.

Banding area	Recovery area							
	B.C.	Alta.	Sask.	Man.	Ont.	Que.	Wash.	Ore.
Canada								
NWT	1	2	2	--	--	--	1	--
British Columbia	5	--	--	--	--	--	7	1
Alberta	--	54	8	3	--	--	33	11
Saskatchewan	--	2	83	2	--	--	3	1
Manitoba	--	--	2	47	--	--	--	--
Ontario	--	--	--	--	163	2	--	--
Quebec	--	--	--	--	4	10	--	--
Pacific Flyway								
Washington	10	--	--	--	--	--	84	18
Oregon	--	--	--	--	--	--	7	103
Idaho	1	1	--	--	--	--	4	2
California	--	--	--	--	--	--	--	13
Central Flyway								
Montana	--	2	4	--	--	--	3	2
North Dakota	--	--	1	1	1	--	--	--
South Dakota	--	--	--	3	2	--	--	--
Mississippi Flyway								
Minnesota	--	--	--	6	9	--	--	--
Wisconsin	--	--	--	1	10	--	--	--
Michigan	--	--	--	--	19	--	--	--
Ohio	--	--	--	--	5	--	--	--
Atlantic Flyway								
Vermont	--	--	--	--	--	1	--	--
New York	--	--	--	--	19	5	--	--
Pennsylvania	--	--	--	--	4	--	--	--
TOTAL	17	61	100	63	237	18	142	151

Table A3.--Number of direct recoveries from adult mallards banded
preseason, 1966-68 occurring in each State and Province
of recovery.--continued

Banding area	Recovery area					
	Idaho	Calif.	Nev.	Utah	Ariz.	Mont.
Canada						
NWT	3	1	--	1	--	2
British Columbia	1	--	--	--	--	--
Alberta	32	4	2	5	1	20
Saskatchewan	--	--	--	1	--	4
Manitoba	--	1	--	--	--	--
Pacific Flyway						
Washington	2	--	--	--	--	--
Oregon	6	56	2	--	--	--
Idaho	88	3	--	4	--	2
California	--	193	--	--	--	--
Nevada	--	5	38	2	3	--
Utah	5	3	2	58	1	--
Central Flyway						
Montana	20	1	1	4	--	88
South Dakota	--	1	--	--	--	--
Colorado	2	--	--	--	1	1
TOTAL	159	268	45	75	6	117

Table A3.--Number of direct recoveries from adult mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	N.D.	S.D.	Wyo.	Nebr.	Colo.	Kans.	N.M.	Okla.
				Recovery area				
Canada								
NWT	1	2	--	2	1	2	--	1
Alberta	7	4	3	15	10	12	1	3
Saskatchewan	6	15	2	20	6	25	--	7
Manitoba	13	5	--	2	1	2	--	1
Ontario	--	--	--	--	--	1	--	--
Pacific Flyway								
Idaho	--	--	1	--	2	--	--	--
Utah	--	--	--	--	1	--	--	--
Central Flyway								
Montana	4	6	7	17	11	4	1	6
North Dakota	61	16	--	10	1	3	--	3
South Dakota	42	57	--	10	1	3	--	6
Wyoming	--	--	2	--	2	--	--	--
Nebraska	1	1	--	10	3	2	--	--
Colorado	1	--	1	2	381	--	15	--
Kansas	--	--	--	--	--	2	--	1
Mississippi Flyway								
Minnesota	12	5	--	4	--	1	--	--
Ohio	1	--	--	--	--	--	--	--
TOTAL	149	111	16	92	420	57	17	28

Table A3.--Number of direct recoveries from adult mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area					
	Texas	Minn.	Wisc.	Mich.	Iowa	Ill.
Canada						
NWT	2	--	--	--	2	--
British Columbia	--	--	--	--	--	1
Alberta	7	5	1	2	5	10
Saskatchewan	15	11	2	2	13	18
Manitoba	4	14	3	1	8	11
Ontario	--	4	2	7	--	2
Central Flyway						
Montana	5	--	--	--	3	2
North Dakota	7	10	5	--	3	10
South Dakota	5	16	10	--	1	12
Nebraska	3	--	--	--	--	--
Colorado	4	--	--	--	--	--
Mississippi Flyway						
Minnesota	2	126	34	8	21	45
Wisconsin	--	11	212	20	4	56
Michigan	--	4	6	65	2	3
Iowa	--	5	2	--	1	1
Illinois	--	1	1	--	--	3
Indiana	--	--	1	--	--	1
Ohio	--	--	--	10	--	1
Mississippi	--	--	--	--	--	1
TOTAL	54	207	279	115	63	177

Table A3.--Number of direct recoveries from adult mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area							
	Ind.	Ohio	Mo.	Ky.	Ark.	Tenn.	La.	Miss.
Canada								
NWT	--	--	2	--	2	--	1	--
Alberta	1	--	12	1	14	1	11	1
Saskatchewan	2	--	30	2	56	3	32	6
Manitoba	1	3	13	2	12	4	14	8
Ontario	3	4	1	3	1	9	--	2
Pacific Flyway								
Idaho	--	--	--	--	--	--	1	--
Central Flyway								
Montana	--	--	3	1	15	1	8	3
North Dakota	2	1	12	--	25	6	14	5
South Dakota	1	1	11	2	31	3	19	--
Nebraska	--	--	1	--	--	--	1	--
Kansas	--	--	--	--	1	--	1	--
Mississippi Flyway								
Minnesota	6	2	7	4	21	8	7	9
Wisconsin	7	9	5	8	15	13	6	5
Michigan	3	9	--	2	--	5	1	1
Iowa	--	--	--	--	1	--	--	--
Illinois	--	--	2	--	--	--	--	--
Indiana	5	1	--	--	--	1	--	1
Ohio	2	32	--	2	2	3	--	--
Missouri	--	--	2	--	--	--	--	--
Tennessee	--	--	--	--	--	1	--	--
New York	--	--	--	--	--	1	--	--
Pennsylvania	--	5	--	--	--	--	--	--
TOTAL	33	67	101	27	196	59	116	47

Table A3.--Number of direct recoveries from adult mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area					
	Ala.	Me.	Vt.	N.H.	Mass.	Conn.
Canada						
Alberta	1	--	--	--	--	--
Saskatchewan	1	--	--	--	--	--
Manitoba	2	--	--	--	--	--
Ontario	1	--	--	--	--	1
Quebec	--	--	--	--	--	2
Central Flyway						
North Dakota	2	--	--	--	--	--
South Dakota	2	--	--	--	--	--
Mississippi Flyway						
Minnesota	2	--	--	--	--	--
Wisconsin	5	--	--	--	--	--
Michigan	3	--	--	--	--	--
Atlantic Flyway						
Maine	--	1	--	1	1	--
Vermont	--	--	9	--	--	--
Massachusetts	--	--	--	1	8	--
Connecticut	--	--	--	--	--	1
New York	1	--	1	--	2	1
Pennsylvania	3	--	--	--	--	--
TOTAL	23	1	10	2	11	5

Table A3.--Number of direct recoveries from adult mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area							
	R.I.	N.Y.	Pa.	W.Va.	N.J.	Del.	Md.	Va.
Canada								
NWT	--	--	--	--	1	--	--	--
Saskatchewan	--	--	--	--	--	--	2	2
Manitoba	--	1	1	--	1	--	--	1
Ontario	--	10	12	1	4	1	6	5
Quebec	1	2	1	--	1	--	1	--
Central Flyway								
North Dakota	--	--	--	1	--	--	--	--
South Dakota	--	--	--	--	--	--	--	2
Mississippi Flyway								
Minnesota	--	2	1	--	1	1	--	--
Wisconsin	--	2	4	--	--	--	3	9
Michigan	--	4	7	1	1	2	2	5
Ohio	--	--	3	--	--	--	1	3
Atlantic Flyway								
Maine	--	1	--	--	2	--	--	--
Vermont	--	2	1	--	1	1	2	--
Rhode Island	2	--	--	--	--	--	--	--
New York	--	99	11	--	10	11	6	9
Pennsylvania	--	--	39	--	--	--	2	4
West Virginia	--	--	--	1	--	--	--	--
New Jersey	--	1	--	--	9	--	--	1
Delaware	--	--	3	--	2	2	5	--
Maryland	--	--	--	--	--	--	3	--
Virginia	--	--	--	--	--	--	--	2
TOTAL	3	124	83	4	33	18	33	43

Table A3.--Number of direct recoveries from adult mallards banded preseason, 1966-68 occurring in each State and Province of recovery.--continued

Banding area	Recovery area				
	N.C.	S.C.	Ga.	Fla.	Mex.
Canada					
Saskatchewan	--	1	1	--	--
Manitoba	--	--	3	--	--
Ontario	2	7	3	--	--
Pacific Flyway					
California	--	--	--	--	1
Central Flyway					
Montana	--	1	--	--	--
North Dakota	2	5	--	--	--
South Dakota	1	1	1	1	--
Colorado	--	--	--	--	1
Mississippi Flyway					
Minnesota	1	4	1	1	--
Wisconsin	4	17	3	1	--
Michigan	3	6	2	--	--
Iowa	--	1	--	--	--
Ohio	2	5	2	--	--
Atlantic Flyway					
New York	9	7	--	1	--
Pennsylvania	1	7	1	--	--
TOTAL	25	59	17	4	2

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of this department of natural resources.

The Department works to assure the wisest choice in managing all our resources so that each shall make its full contribution to a better United States now and in the future.

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WASHINGTON, D. C. 20240

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